



GULF COAST RAIL DISTRICT VISION FOR REGIONAL RAIL



OCTOBER 2014

GULF COAST RAIL DISTRICT
6922 OLD KATY RD ★ HOUSTON ★ TEXAS ★ 77024

Cover photographs courtesy of

Top left - *Mike Bates*

TABLE OF CONTENTS

MISSION.....	1
INTRODUCTION	1
VISION STATEMENT.....	1
BACKGROUND	2
NEAR-TERM VISION	3
NEAR-TERM FREIGHT RAIL IMPROVEMENTS.....	4
NEAR-TERM PASSENGER RAIL IMPROVEMENTS.....	6
CONCLUSION.....	8

MISSION

GCRD supports and pursues projects to address the following goals:

- **Safety and security**, particularly safety at grade crossings and homeland security
- **Mobility and access**, for vehicles, pedestrians and trains, including commuter rail
- **Quality of life**, through context sensitive design, air quality improvements, noise reduction, natural hazard mitigation, and other neighborhood enhancements

INTRODUCTION

The Gulf Coast Rail District (GCRD) was created in 2007. At the time, 2,200 freight trains moved through the Houston region each week and freight volumes were forecasted to nearly double by 2025. As 2015 approaches, the Class I railroads expect the Houston freight rail network to reach capacity, carrying more trains and longer trains. Commodities with significant growth opportunities for the railroads are either originating in or destined to Houston.

- Energy and byproducts
- Drilling materials
- Chemicals
- Mexico imports and exports

These commodities are driving regional economic activity and job growth. As a result, more people are moving to the Houston region. The area's 2010 Census population of 5.9 million is forecasted to reach 8.8 million by 2035. The number of people and amount of freight moving through the region will significantly impact the regional roadway network. Local officials are looking to rail to move not only some of the freight, but also some of the people.

The Gulf Coast Rail District has been directed to work with local transportation planners and the Class I railroads that own the freight rail network to develop rail network improvements that will benefit the region's residents and economy. GCRD is working to keep the regional economy "on track".

VISION STATEMENT

The ultimate vision of the Gulf Coast Rail District is to create a rail network that supports safe, unimpeded freight movement and safe, reliable passenger movement.

- Houston needs a freight rail network that is unconstrained in terms of current and forecasted capacity, permits expansion to support economic growth, provides a fluid level of service to the customer base, and promotes the safe movement of commodities with minimal impact on the community.
- Houston also needs a passenger rail network that will move commuters between residential growth areas outside of Beltway 8 and job centers inside of Beltway 8 and Loop 610.

Long-term, the Gulf Coast Rail District will work with the Class I railroads to try to consolidate freight rail operations into a few of the region's existing corridors where safety and mobility

improvements can be focused. This focused investment can benefit freight railroads' operations and the multimodal regional transportation network.

- Create sealed freight rail corridors with combinations of grade separations and road closures.
- When needed, add capacity in sealed freight rail corridors.

This vision will require extensive coordination and partnership with the Class I railroads operating in the Houston region. Hence, it is the basis of a long-term vision.

Near-term, the Gulf Coast Rail District believes it is necessary to grade separate the rail crossings where growth in freight rail traffic will have the most impact on roadway safety and mobility, and to initiate commuter rail service in corridors where there is adequate right-of-way adjacent to existing freight rail corridors. This vision will require coordination with local partners committed to improving regional mobility. Hence, it is the basis of a near-term vision.

Completion of these near-term vision components will better incorporate rail into the regional transportation network. Freight rail will have a lesser impact on roadways and passenger rail will provide an alternative to congested roadways. Each near-term component provides a strong basis for a longer term vision for regional rail.

BACKGROUND

Since its inception, Houston has prospered because of its rail network. Following the Galveston hurricane of 1900 and the discovery of oil at Spindletop in 1901, Houston developed the nation's largest petrochemical complex at the Port of Houston. Rail lines were added to serve the industrial complex. By 1926, rail had become such a prominent part of the city that Houston advertised itself as the city "where 17 railroads meet the sea."



Houston's growth potential was realized early and an outer rail loop around the downtown area was constructed in 1914. Known today as the Terminal Subdivision, this "outer loop" runs through the Galleria area, Memorial Park and the Heights.

In 1924, Houston railroads organized the Port Terminal Railroad Association (PTRA) which services industrial facilities along Buffalo Bayou and the Houston Ship Channel. The PTRA operates on Port of Houston Authority property and continues to grow in an effort to meet shippers' demands for service.

More than 100 years later, most of that original rail network remains. The rapid growth of the region, the Port of Houston and local industry has forced the railroads to revamp operating procedures and perform incremental infrastructure improvements that address current needs. Overall, however, there has not been a significant expansion of the original rail network in terms of adding mainline or other rail corridors.

Today, nearly 1,000 shippers based in the Houston region rely on the freight rail network for business operations. As the region’s population grows, so will demand for consumer products, much of which will arrive via freight rail. Expansion of the Panama Canal could also bring more products through the Port of Houston for transfer to rail towards destinations throughout Texas and the Midwest. The region’s 100 year old freight rail network will be challenged.

In a 2013 presentation to the Gulf Coast Rail District Board of Directors, BNSF Railway (BNSF) and Union Pacific Railroad (UPRR) emphasized that commodities with significant growth opportunities are in Houston. The carriers emphasized that transport of those commodities is expected to require all of the capacity on the regional freight rail network in the next few years. Although a positive indication of the region’s economic development, increased freight rail volumes will have two negative impacts on the region’s transportation network:

- Increased delays at the region’s 1,200 at-grade roadway crossings; and
- No freight rail right-of-way available for commuter rail operations.

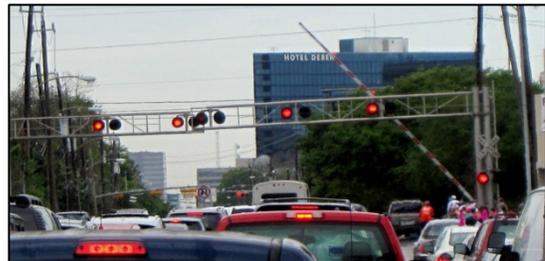
State and local officials recognize that the Houston region must maximize utilization of rail to minimize roadway congestion. GCRD is working to establish public-private partnerships with government agencies and freight railroads to implement projects that will maximize freight rail operations, reduce rail and roadway delays, and enable the initiation of passenger rail operations in the Houston region.

NEAR-TERM VISION

This GCRD near-term vision represents a first step towards addressing immediate needs of the Houston region with respect to rail service and infrastructure. The near-term vision includes a component for freight rail improvements and a component for passenger rail improvements.

FREIGHT RAIL IMPROVEMENTS – Grade separate to improve safety & mobility on roadways and rail

Houston needs a freight rail network that is unconstrained in terms of current and forecasted capacity, permits expansion to support economic growth, provides a fluid level of service to the customer base, and promotes the safe movement of commodities with minimal impact on the community. The Class I railroads have the means and the responsibility as a service provider to meet shipper demand within the Houston region. GCRD will work with local partners and Class I railroads to try to minimize the impact of expanded operations on the community.



PASSENGER RAIL IMPROVEMENTS – Add commuter rail adjacent to existing freight rail corridors

Houston needs a high capacity transit network that will move commuters between residential growth areas outside of Beltway 8 and job centers inside of Beltway 8 and Loop 610. The Class I railroads have stated that increasing freight volumes will not allow use of the freight rail network for commuter rail operations. GCRD will work local partners and Class I railroads to identify and develop potential commuter corridors adjacent to existing freight rail corridors.



NEAR-TERM FREIGHT RAIL IMPROVEMENTS

Grade separate to improve safety and mobility on roadways and rail

Over the next twenty years, given growth rates for both vehicle and train traffic, the total public cost of delay at the roadway-rail crossings in the Houston region is estimated by the 2007 TxDOT Houston Region Freight Study to be more than \$2.6 billion.

- There are 2,200 trains moving through the Houston region each week.
- There are approximately 1,200 at-grade rail crossings in the Houston region.
- Total traffic volume at crossings is nearly 5 million vehicles per day.

The region's strong population growth since the 2007 TxDOT study combined with the recent unanticipated growth in freight rail traffic means total cost of delay to the public at rail crossings is most likely higher. Grade separations remove the potential conflict with trains resulting in

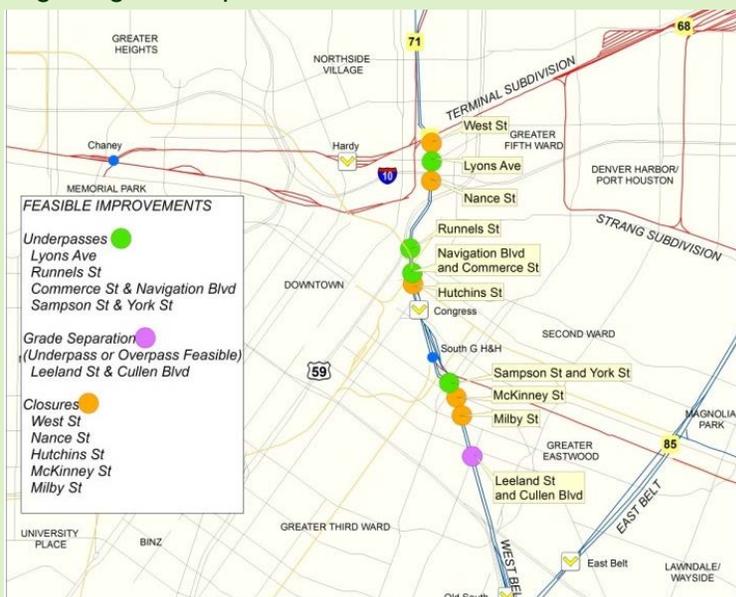
better travel times for vehicles and trains; safe passage for vehicles, cyclists and pedestrians; and lower emissions of harmful air pollutants. The direct public benefit associated with construction of grade separations is clear and measurable. It is a prudent use of limited public funds that will provide transportation (and other) benefits for years to come – especially as train and vehicle traffic continue to increase in the region.

WEST BELT IMPROVEMENTS PROJECT

As recommended by the TxDOT Houston Region Freight Study, the GCRD West Belt Improvements Project combines grade separations and closures to create a sealed freight rail corridor:

- 5 grade separations;
- 5 road closures; and
- 5.7 mile sealed freight rail corridor through downtown Houston.

The West Belt project will provide the opportunity to compare whether the more comprehensive approach with a combination of grade separations and closures provides substantially improved benefit to the community than singular grade separations.



The 2007 TxDOT HRFS recommended numerous grade separations. Most were accompanied by recommendations for closure of adjacent roadways. The adjacent closures increase safety and provide greater benefit to railroad operations.

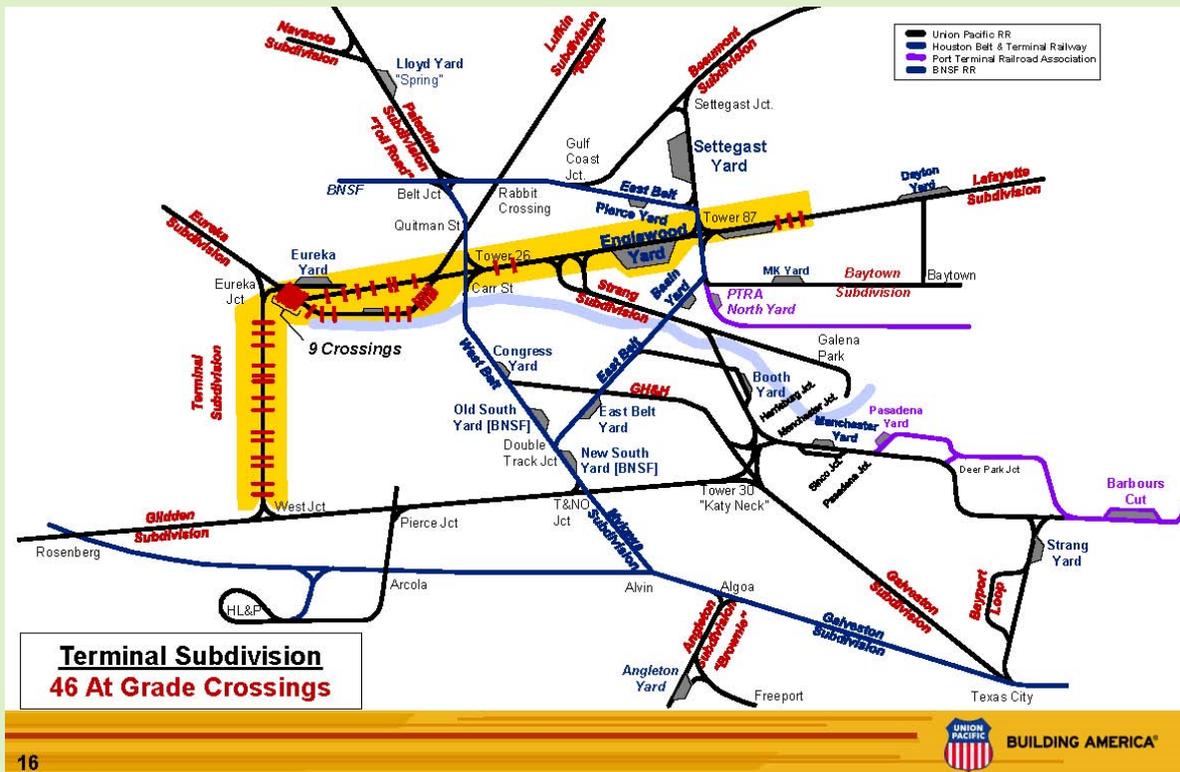
Several factors will limit the feasibility of grade separating crossings. Traffic volume and first responder access could indicate need, but adjacent development or environmental issues could prevent construction. GCRD is updating data regarding traffic

volumes and delays at regional crossings. GCRD has also requested that Class I railroads operating in the region identify crossings that most impact their operations. Review of the two sets of criteria will lead to development of grade separation proposals that can be taken through the project development process, including public input.

AT-GRADE CROSSINGS, TERMINAL SUBDIVISION EXAMPLE

Union Pacific Railroad has highlighted the number of at-grade crossings along the Terminal Subdivision as impacting its operations (yellow highlight on map). This corridor includes many high volume roadways.

Roadway	Average Daily Traffic Volume	Delay Time (hrs) (over 25 yrs)	Delay Cost (over 25 years)
Richmond Ave	27,358	1,021,335	\$15,547,000
Shepherd / Durham Dr	36,652	2,234,825	\$29,878,000
Houston Ave	15,873	911,880	\$12,071,000



NEAR-TERM PASSENGER RAIL IMPROVEMENTS

Add commuter rail adjacent to existing freight rail corridors

As the Houston freeway system reaches capacity, the region is again looking to rail to foster economic growth. Clearly, the more freight that moves by rail the less freight there will be on regional roadways. With 3 million more persons expected in the Houston region within the next 20 years, rail can also provide an alternative for commuter transport.

Commuter rail is a passenger rail mode that primarily operates between the city center and the middle to outer suburbs. Commuter rail draws commuters in peak periods—people who travel to and from home and work on a daily basis.



GCRD is investigating the opportunity and feasibility of using rights-of-way (ROW) adjacent to freight rail to develop commuter rail in the region. The concept is to have separate track for freight and commuter rail in adjacent ROW.

This approach using adjacent ROW is an outgrowth of Class I railroad notice that sharing freight rail right of way will not be an option in the Houston region. GCRD hosted a workshop for local transportation partners on November 15, 2013 to explore the feasibility of separate but adjacent ROW to accommodate both types of rail in the same corridor.

The group discussed seven corridors previously studied and opened up for comments and discussion about additional corridors. The workshop participants generally concurred that, of the seven corridors studied previously, the following five corridors warrant further feasibility studies for commuter rail service outside of freight rail right of way:

- Westpark Tollway
- State Highway 35 (SH 35) State Highway 249 (SH 249)
- US Highway 290 (US 290) US Highway 90A (US 90A)

GCRD funding enabled feasibility analysis of three corridors: Westpark, US Highway 290 and US Highway 90A. Studies included potential terminus points that could connect to Houston METRO services as well as possible access to a downtown passenger rail station with Houston METRO connections. The feasibility analyses incorporated input and planning components from TxDOT intercity passenger rail planning efforts and the privately-funded high-speed rail line to Dallas. GCRD will continue to work with local partners to keep project development moving.

SUMMARY OF COMMUTER RAIL CORRIDORS

Hempstead/US 290 Corridor – 45 miles between IH 610 & Hempstead, TX

- Houston terminus possible at or near IH 610/Northwest Mall. Needs transit connections.
- TxDOT corridor work underway; plans include 50' ROW for high capacity transit.

Westpark Corridor – 27 miles between Uptown Transit Center & Fulshear, TX

- Houston terminus possible at planned Uptown Transit Center with transit connections.
- Publicly owned ROW but constraints in areas create engineering challenges.

US 90A Corridor – 42 miles between Texas Medical Center & west Fort Bend County line.

- Houston terminus possible near Texas Medical Center southern campus. Needs transit connections.
- Significant ROW constraints through Sugar Land.

PASSENGER RAIL ACCESS TO DOWNTOWN

State and local rail planning studies have focused on use of the existing Amtrak station for development of an intermodal passenger station that could accommodate commuter rail, intercity rail, high-speed rail, light rail, local bus, regional bus, international bus, taxi and rental car service.

Access to the Amtrak site will require use of freight rail right of way. Freight rail capacity would have to be added to the Freight Main along Winter Street to accommodate the addition of freight trains currently operating on the Passenger Main behind the Amtrak station.

The 2012 H-GAC Houston Intermodal Terminal Access Study (HITAS) estimated the cost to shift the freight capacity to be \$71 million. This cost, associated right of way acquisition and community impacts must be included in consideration of any passenger rail route to the downtown Amtrak station.

The 2012 H-GAC study assessed access routes from the northwest. The 2014 GCRD study assessed access routes from the north. Environmental and neighborhood impacts were analyzed including impacts on roadway, transit, pedestrian, and bicycle travel. Both studies demonstrated that commuter rail connections to the Amtrak station are technically feasible. Further discussions with stakeholders, including the general public and Union Pacific Railroad, are required.

CONCLUSION

The vast freight rail network running through the Houston Region provides significant opportunity for continued economic development in the broadest sense.

- With freight traffic growing significantly, every reasonable rail corridor solution should be discussed to promote the region's ability to grow. The Class I railroads have committed to make Houston region investments to meet industry demand for freight rail capacity. GCRD will lead efforts to mitigate impacts on the region's roadways with grade separations and road closures where feasible.
- With commuter traffic growing significantly, a commuter rail alternative to congested roadways must be explored. The Class I railroads and local partners such as TxDOT and toll authorities have fully developed transportation corridors. GCRD will work with them to identify adjacent, elevated or other right of way that can be developed for commuter rail operations.

This Regional Rail Concept will require significant commitment from all levels of government, the public and, the Class I railroads. The intent of this concept is to sustain the Houston region's growth and enhance quality of life.



Incident at Sherwin Street at-grade crossing on June 13, 2010



2014 GoogleEarth aerial image of the Sherwin Street at-grade crossing